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ABSTRACT

Debate in West Germany among technicians, economists, politicians, and educators about technological advancement and the use of computers focuses on the need to be informed about the consequences of the technological revolution. Some concerns are that computer use will lead to social isolation, a growing bureaucracy and authoritarian power structure, and isolation from other workers leading to weakened union activities. The general public, however, tends to deny or suppress the already known aspects of the new information society. Highly educated and professional young people, on the other hand, are more skeptical of technological products and developments. The possibilities offered by the new technology are seen as value conflicts; i.e., microcomputers may lead to more leisure but also to more unemployment, data processing may be misused for political control, technological development may improve well-being, but also be used to develop weapons, and natural resources may be further exploited. Current textbooks offer little insight into these problems and it is apparent that most young people receive their computer education outside the schools via video games. Educators have recognized that computer technology is a necessary part of education, but suggest that German teachers have general reservations about using the media. (KC)

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The New Technology in Political Education in West Germany

by

Siegfried George

Paper presented at the Annual Conference of the Social Science Education Consortium, Inc., (20th, Athens, GA, June 8-11, 1983).

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The new Technology in Political Education in West-Germany

The new technological revolution that is taking place in our technological and economic system has not been fully understood by a large part of our population. There is a public debate among technicians, economists and politicians about the consequences that should be drawn from these new developments but many people doubt that the scope of the on-coming problems have even been understood. And this is even more true of our schools. Curriculum-planers/teachers/students do not learn enough about the new technology.

I would like to illustrate this by two examples: which typically were not found in text-books but in weekly magazines.

1. Example: How Computers may change the Conditions of Work

Mr. Kapzig has been working on lathes for 25 years. His work implied a lot of moving around, picking up material etc. which quite often caused aches in his back.

Now everything has changed. His machine was exchanged, the new one works on computerized numerical control. Mr. Kapzig's wages have gone up but also his weight.

The automat works three times as fast as Mr. Kapzig used to do. He is seemingly in a more favorable position: no hard physical work, no moving around, better clothing. But he also feels that this type of work is catching on him in a manner previously unknown. He discovers in himself a tendency to isolation. Some years ago he played soccer, but now he is neither physically nor mentally inclined to do physical exercises. He even refuses to talk about his problems. To work with these programs results in psychic tensions. He gets afraid and trembles whenever he realizes what possible damages might result if he ever overlooked something, because a crash in such a machine might be very expensive. The new machine

guarantees a higher standard of living for the time being. But Mr. Kapzig is afraid of the future when robots might take over or less qualified younger people would replace him. Even at night he cannot forget the series of numbers and he finds it hard to 'cut off' (cf Spiegel, Sept. 6,82)

2. Example: Some Problems of Home-Computers

Mrs. X is sitting in front of her monitor. She first sends an electronic letter to her friend, then checks through the catalogue of a touristic firm and registers for a trip, she completes the typing work as part of her job, via VIDEO she controls whether the children are asleep, she turns on educational television about the history of art, she reads electronic news, informs her neighbour that he should turn down his music box, she listens to TV-informations about 'what to do against loneliness', participates in the electronic search for partners, watches for the fifth time the wedding ceremonies of Prince Charles, opens the front yard for the homecoming dog, asks through TV what dinner she should make on monday, checks the money on her account and before going to bed calls for religious consolation.

The electronic household saves a lot of activity. Mrs. X did not speak a word, did not shake a hand, did not walk one step. She had no experiences whatsoever and thus wasted a complete day of her life. (cf Der Gewerkschafter, Zeitschrift der IG-Metall, March 83)

These two examples show some of the problems concerning the introduction of the new technology as they are being discussed in West-Germany. People are not at all certain what the future is going to be like. Here are some positions:

1. "There may be a technological paradise with information-nets around the globe, huge data-collections in administrational centers robot-plants without workers and jobs with monitors in the living-room and play-robots for single children, for lonely, handicapped and old people." (Frankfurter Rundschau Feb. 26, 83)

2. "There may be a growing bureaucrary and authoritarian power structures, a far reaching structural unemployment, a tendency to cultural homogenity, an alienation on the job, ... information technology does not necessarily lead to more autonomy and selfdetermination for communities and countries in the third world, but on the contrary: those centres will be strengthened where the information chanals meet". (ibidem)

3. Especially, the dangers for union-activities are widely discussed: part-time work in the living-room with a monitor will give you only small social protection, there is no group which might support your position. People working at home might be used as a means of putting pressure on those in the plant. The computer can control every bit of work that some one does: And there is a good chance to have workers an far distances - those who do not know the rest of the personnel. (cf FR Jan. 22, 83)

The positions of the political parties in our country towards the technological challenges are controversial. All agree that these changes are necessary for economic international competition and the many chances for the improvement of individual and social life.

The Attitudes of the German Population Towards the New Technology

The transition from the industrial to the information age is for many people in our society still like a piece of science fiction. There is a tendency to deny, to suppress the already known aspects of the new information society. There is no agency in charge of the technology assessment in West-Germany. Inventions are being introduced before consequences have been calculated. Repairing the damages, saving the remaining humanity - that is what politicians do. There is a crisis management but not a foreseeing politics to avoid evil developments.

Empirical studies show: more than 50 % of the population know neither the term nor the content of micro-electronics. Of those who know 75 % favour the new technology (cf. Wochenschau Sept./Oct. 1982, p. 162)

In mass media it has been often claimed that young people in West-Germany have lost their interest in modern technology. One indication for this was seen in the proportionately declining student enrollment in engineer sciences. At present this trend is being changed. The interest of students in mathematics, physics, chemistry has grown so that e.g. mathematics is the favourite elective course of 35 % of all male high-school students (female students choose mathematics 19 %).

Young German people know more about modern technology than adults. This might result from their every day contact with technological products. They have cars and motorcycles, they learn to operate with radios and televisions. Many of them do repairing work. Products of micro-electronics are known to them as computers, tele-games, hi-fi-sets etc.

The attitudes of young people towards technological products and developments vary according to the educational level. The higher the education of the professional achievement the more sceptical are young people. Students of the Gymnasium and of the university see more dangers in the technological development than workers or administrational employees of lower education.

Within the last 15 years young people in West-Germany have become more critical about the technical world. Empirical studies give the following figures:

Young German people between 16 and 20 years believed that technological development is

	1966	1976	1981
	%	%	%
more a blessing	83	53	23
partly/partly	8	33	54
more a curse	2	8	19

(Rainer Geissler, Jugend und Technik, Frankfurter Rundschau April 27, 1983)

Other surveys show a more favourite attitude but all agree that the ambiguity of technology is well known to our youth. The possibilities offered by the new technology are experienced as value conflicts. Both the problems of self-understanding

and the future development of our society constitute political-ideological controversies. Some of them are:
a) microcomputers may lead to more leisure time - but also to more unemployment,
b) data processing is necessary for the economic survival - but may also be misused for political control. (Example: the planned census and the decision of our supreme court),
c) cable television (it is just being installed in West-Germany) may have severe effects on leisure activities. It may lead to even more inactivity but also to more political participation,
d) the technological development may be used for the well-being of men - but also for the improvement of weapons,
e) the natural resources may be further exploited - but without regarding pollution etc?

Although some of these problems are not immediately related to the new technologies, many people hope for better solutions as a result of these technological changes (e.g. the use of sun-energy).

Textbooks, Instructional Materials

Viewing present-day textbooks in political education one gets the impression that the authors have not realized the problems of technological change on a broad scale. Some authors do not mention these problem areas at all, others offer restricted informations.

1) Heinrich Fisch/Hans-Helmuth Knütter, Sozialwissenschaften I, Lehr- und Arbeitsbuch für die Sek. II, Oldenbourg Verlag, München 1980
   - There is one single remark on computerized production (p. 280) - nothing else.

2) Willi Frank, Politik heute, Winklers Verlag, Darmstadt, 2nd ed. 1981
   - Only rationalisation in its relation to unemployment is mentioned (p. 132) - nothing else.

3) Herbert Baumenn/Alfred Sitzmann, Der einzelne und die Gesellschaft, Sozialkunde für Realschulen und Gymnasien. Verlag H. Stam, Köln 1981
- No information to the new technology at all.

4) Peter J. Schneider/Manfred Zindel, Politik, Lern- und Arbeitsbuch, 5th ed. 1981, Winklers Verlag, Darmstadt 1981
- Automation, the use of robots and its relation to unemployment - nothing else.

5) Wolfgang Hilligen/Walter Gagel/Ursula Buch, Sehen - Beurteilen - Handeln, Hirschgrabenverlag Frankfurt, 1982
- the use of bureau-computers (p. 138)
- data processing (p. 299)
are the only topics.

6) Kurt G. Fischer, Gesellschaft und Politik, 6th ed. 1982, Metzler Verlag, Stuttgart
- new media (p. 24)
- computers in plants and bureaus (p. 143)
are the only topics.

More progressive are some instructional materials which are available for all teachers. These materials are published periodically and are by far more up to date than most of the textbooks. Some examples:

1) Technologischer Wandel, Wochenschau Sept./Okt. 1982
2) H. Krzykowski, Rationalisierung durch Textcomputer, in: arbeiten und lernen, Nov./Dez. 82
3) M. Hoppe, Zur Entwicklung der Datenverarbeitungstechnik, in: arbeiten und lernen, (März/April 1983)
4) Three examples from:
Wirtschaft und Unterricht, Informationen für Pädagogen in Schule und Betrieb:
   - Mikroelektronik (Dezember 81)
   - Neue Medien (Mai 82)
   - Industrieroboter (November 82)

One explanation for the existing lack of information about the new technology might be seen in the fact that problems of technological change are to be treated primarily in 'Polytechnik/Arbeitslehre'. But, unfortunately, many of our students do not have courses in 'Polytechnik/Arbeitslehre'.

Consequences for Education

It looks reasonable to suppose that children in West-Germany today learn about the new technology more outside of school than in school. One example may illustrate this:

Instructional Goal: Dumb but Fast

Effective recipes how to change the children of men into children of computers have already been invented: a generation of people with reduced thinking and feeling. From living rooms, restaurants, bars the new generation of teachers blow and peep: the tele-games. They do a better job than any man would be able to.

Youngsters are forced to learn what their professional world will demand from them: pushing buttons - people being used to monotonous work who cannot be diverted by anything alive. People who respond to the demanded stress of the machine not with refusal but with more competition. With tele-games you cannot play. They give you the action and you do not know why and how it is given. To gain means to take it without thinking. The winner must be dumb but fast: Forget about your head - that's all. Whoever uses creative phantasy to understand the parts of the play or to develop a strategy for intelligent reaction - this man is a bad player. And he will be a bad worker.

Tele-games are perfect. Nearly all of them are apt to play off 'frustration', the lack of sentiments, the feelings of aggression. And most of them have their aim in the destruction of the enemy. (cf. Der Gewerkschafter, Zeitschrift der IG-Metall, April 83)

Pedagogues are not unaware of the problems stated in the above example. In a conference of the 'Gesellschaft für Pädagogik und Information' held at Dortmund this year different positions were stated.(cf. Frankfurter Rundschau March 31, 83)

a) The participants agreed that the souvereign use of data processing systems will become an indispensable skill within our civilization and for that reason a necessary part of education and professional training.

b) Some claimed that computer-systems offer better and more up-to-date information than any text-book can possibly do.

c) Opposed to that view it was stated that the text-book has many psychological and anthropological advantages over and against computers. It is a medium of a human dimension, it is the most personal means of learning, which allows the human being to follow his intrinsic drive for hunting and collecting and by that developing his personality. And the limited information contained in a text-book gives some feeling of safety against the horror vision of being lost in the unending amount of video-text information. And as some-one put it: can you imagine to read Shakespeare on video-text?

d) One of the experts favoured a more realistic view. He claimed that German teachers are very much reserved against the use of media in general. Up to now 0,8 to 2 % of all instructional time is being used for media. The more complicated the use of media the less inclined are German teachers to use them. Maybe the new media will not have more importance than the so far used micro-computers which comprise about 5 % of the student's activities in school.

Can it be expected, it was asked, that the teacher who breaks into sweating already when he uses the video-recorder, sits down in order to use a table computer? Are the new media really as new as it is claimed? If, e.g. the TV-disc replaces video can anyone advise to buy these costly systems for our schools while the older machines are being used so seldom? And how is this information system to fit into our understanding of teaching and learning? Will there be a strict learning of facts which we just got rid of?

It seems that German teachers are more reluctant in the use of the new technology than their students. Since three quarters of students leaving school complain about the insufficient information about modern technology in school a general re-thinking of our curriculum might be necessary. It would not be the first time that teachers learn from their students rather than teach them.